

**Notice of Allowability**

Application No.

09/983,074

Examiner

Hai C. Pham

Applicant(s)

TAMAKI, EIICHI

Art Unit

2861

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to RCE filed 10/12/04.
2. ☒ The allowed claim(s) is/are 1-9 and 11-14.
3. ☒ The drawings filed on 23 October 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets" ) must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948 ) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 10/12/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

### REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance: claim 1 is patentable over the prior art patents and printed publications because of the specific configuration of the laser irradiating device having a laser source for emitting a first laser beam, which is modulated by a diffraction grating light valve having a plurality of reflective elements arranged in a predetermined direction, the reflective elements comprising a ribbon-shaped fixed reflective element having a fixed reflecting surface and a ribbon-shaped movable reflective element having a movable reflecting surface, wherein an optical system is provided for converting the first laser beam into a second laser beam before being modulated by the diffraction grating light valve, said second laser beam being linearly polarized in a direction parallel to said predetermined direction. The combined limitations are not taught by the art of record alone or in combination.

Claim 5 is patentable over the prior art patents and printed publications because of the laser irradiation device further includes the laser source having a plurality of light emitters for emitting the first laser beam linearly polarized and wherein the optical system comprises a halfwave plate for rotating the polarization of the first laser beam by 90 degrees. The combined limitations are not taught by the art of record alone or in combination.

Claim 7 is patentable over the prior art patents and printed publications because of the laser source of the laser irradiation device comprises a single emitter for emitting the first laser beam linearly polarized in the same direction as the arrangement of the

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reflective elements of the diffraction grating light valve and wherein the optical system converts the first laser beam into a second laser beam before being modulated by the diffraction grating light valve without changing the direction of polarization of the first laser beam. The combined limitations are not taught by the art of record alone or in combination.

Claim 9 is patentable over the prior art patents and printed publications because of the laser irradiation device includes the laser source emitting the first laser beam having a peak wavelength ranging from 800 nm to 820 nm linearly polarized in the same direction as the arrangement of the reflective elements of the diffraction grating light valve, and wherein the diffraction grating light valve modulated the first laser beam to produce a zero-order diffracted signal beam. The combined limitations are not taught by the art of record alone or in combination.

2. Claims 2-4, 6, 8 and 11-14 are allowed because they are directly or indirectly dependent from claims 1, 5, 7 and 9 above.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Information Disclosure Statement***

3. The information disclosure statement (IDS) submitted on 10/12/04 is being considered by the examiner.

***Pertinent Prior Art***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Gelbart (U.S. 6,268,948) discloses an image forming device using a laser diode emitting a first linear polarized laser light beam, a beam splitter for converting the linear polarized beam into a second light beam, and a diffraction grating light valve for modulating the second light beam, the diffraction grating light valve having an array of deformable micromachined ribbons arranged in a predetermined direction (e.g., horizontal direction), wherein each of the ribbons is moved by electric signals. However, Gelbart fails to teach the second [vertically] polarized light beam being parallel to the direction of arrangement of the ribbon array. Gelbart also fails to teach the diffraction grating light valve having fixed and movable reflective elements.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C. Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on (571) 272-1934. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HAI PHAM  
PRIMARY EXAMINER

March 29, 2005